and under what kinds of circumstances. According to Schrader, it is these structures that transform individual acts into collective ones. Furthermore, he regards these formal and explicit structures as being essential for corporate efficiency, largely on the grounds of improving accountability and preventing individual appropriation of corporate assets. It is not entirely clear, however, how they do this, or at least in what circumstances they would, and would not, do so. Additionally, if these structures imply a high level of individual role specification and separation, they clearly do not exist in many large Japanese and Korean firms, let alone in Chinese family businesses. Presumably Schrader would agree that this has not led to a lack of effectiveness of these enterprises and so he needs to consider this point in rather more detail. This difficulty highlights the Anglo-Saxon focus of this book which overemphasizes the formal and legal aspect of firms as economic actors.

While most students of organizations will agree with Schrader that any adequate analysis of firms in 20th century market economies requires an understanding of how they function as collective actors, I am not sure that they will find much in this book to help them develop such an understanding. Indeed, since he appears to think that the aim of economics is to construct its current sort of highly general and abstract theory, it is not at all obvious whether any economic replacement for the marginalist theory of the firm would be more successful. As long as economics persists in regarding Newtonian mechanics as the only legitimate form of scientific theorizing, it seems unlikely that it will produce new theories which can deal adequately with collective, interdependent social action. It is a pity that Schrader did not consider the kinds of theories that would take firms seriously as collective actors, to establish whether in more detail they are consonant with economists' conceptions of scientific theories.

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## Gordon Tullock: Economic Hierarchies, Organization and the Structure of Production

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An important contribution to the study of organizations is the approach by Coase, which states that a primary function of firms within the economy is to minimize transaction costs. Williamson (1985) developed this theme further, theoretically and empirically. The advantages and disadvantages of market exchange is the starting point of these studies because the knowledge about the way market exchange functions is relatively well developed compared with non-market situations. The driving force behind the emergence of hierarchical governance structures is the inability of the market in certain circumstances to deal adequately with coordination and incentive problems.

The current literature is mainly confined to comparative analyses of market and hierarchical institutions. Two main challenges exist. *First*, many different hierarchical modes of governance can be observed (churches, governments, firms), but they are hard to distinguish using this approach. Williamson emphasizes the different internal judicial systems, whereas Weingast and Marshal (1988) focus on the difference between the voting procedures used in legislative processes compared to conventional firms. *Second*, the internal functioning of hierarchical structures is hardly addressed. An important ingredient of a general organization theory will probably be the operationalization of the notion of bounded rationality. This might shed a different light on the solutions proposed nowadays to resolve coordination and incentive problems. The book by Tullock sets out not only to identify under which circumstances governments are preferred to conventional firms as an institution, but also addresses coordination and incentive problems in environments in which bounded rationality features prominently in the form of issues of communication and span of control.

Chapter 1 introduces some important questions regarding hierarchies, such as the existence and optimal size of a hierarchy, and briefly indicates several approaches to the organization of hierarchies. The approaches are criticized as only providing a partial explanation of organizations. They are followed by the statement that this study will be more general in the sense that the focus is on things which all hierarchies have in common and things which make them different. The introduction is expanded in Chapters 2 and 3 with examples to illustrate the observation that there is an immense variety of organizations. Organizations emerge, as Coase described, in order to reduce bargaining costs. A hierarchy is defined (p. 14) as 'a large number of men/women who stay together for some time, are organized into various ranks of leaders, and are led'. A similarity between many different hierarchies is that they face a 'loss of control as orders go down or information comes up through a bureaucratic hierarchy' (p. 23). Another similarity is that there are many non-production workers in hierarchies engaged in supervision and coordination.

The next three chapters consider the individual in a hierarchy and his dealings with superiors, peers and inferiors. A difference between private business and government, addressed in Chapter 4, is that objectives are better defined and measured in the former due to their greater simplicity. This enhances performance because it allows for the evaluation of corporation officials on the basis of accounting data. (A reason for the existence of government is that it is unwise to perform certain activities in a profit maximizing way.) A difference between a market relationship and a relationship with a hierarchical superior is the relative difficulty of breaking contracts in the latter, which implies that it is relatively attractive for lower officials to carry out orders and engage in political activities. Chapter 5 addresses the quality of information received by those higher up in the hierarchy, generated in the process of political manoeuvering, and how it is improved by the winnowing out process in committees. Chapter 6 deals with the span of control and information acquisition gained by monitors, accounting data and by dividing up jobs in order to create standards of comparison.

Chapter 7 argues that it is easier to get structural reform by the use of carrots and sticks than to change individual preferences. Chapter 8 stresses that the complete hierarchy of customers, financiers, managerial and non-managerial employees has to be taken into account when looking at how they police its efficiency. Different hierarchical forms experience different environmental pressure, e.g. voters in an ordinary democracy do not have the same interest in the outcome, as a large shareholder in a corporation. The element of unpredictability in supervision and monitoring and the importance of policies that are easy to monitor are stressed in Chapter 9. Chapter 10 analyzes rent seeking in organizations, the theme for which Tullock is known. Job rotation and reorganization make rent seeking less attractive, but they reduce the benefits of specialization. The final three chapters repeat and extend some of the preceding themes.

A recurring problem of this book is that some difficult and relevant topics can only be appreciated by those who are well acquainted with them because they are treated so briefly, whereas relatively easy-to-grasp statements are repeated time and again. An example of the first is that just one page is devoted to a discussion of transaction costs theory, the monitoring view of Alchian and Demsetz, X-inefficiency, the principal-agent approach and mechanism design, whereas an observation about the perplexing variety of organizational forms is illustrated by an overwhelming number of examples. The author also incorporates several very personal remarks and feelings into the text which give the impression that he has some bad feelings regarding the — lack of — credit he has received for his own contributions.

The 'structure of production' mentioned in the title is hardly treated at all in the book. One would expect that issues such as mass production, flexible manufacturing technologies, just in time, would be addressed. However, the emphasis is more on communication and loss of control in hierarchies. However, the prominence of communication and control issues is nonetheless an attractive feature, because economists have mainly paid attention to incentive problems during the last decade. In fact, the desirability of directing the research agenda seems to be the main message of this book.

A surprising feature of the book is the lack of references to the literature on those topics which *are* treated extensively (e.g. Milgrom and Roberts 1988; Ickes and Samuelson 1987; Fudenberg and Maskin 1986). An alternative to the folk theorem explanation for the immense variety of institutional forms may be that organizations have so many degrees of freedom regarding the organization of their activities that several different forms can achieve the same result. It may be more fruitful to switch from a Marshallian perspective in which the purpose is to predict the exact organizational form, to an Edgeworthian perspective in which the task consists of explaining which governance structure will definitely not survive.

In summary, one gets the impression that Tullock has set himself too ambitious a task. This has resulted in a book which is cluttered with examples. A theory organizing these examples into a coherent framework is badly missing. Predictions are hardly formulated and the efficiency of existing organizational forms is often assumed. The author is frank in his closing remarks (p. 186) when he writes '. . . certain details of the various problems met by these organizations dictate one particular form as most efficient. That seems to me the most likely explanation, but as the reader has discovered, I have been unable to put my finger on those detailed reasons'.

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## C. U. Ciborra: Teams, Markets and Systems

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This book represents an ambitious attempt to consider the implications of advanced information technology on work organizations. Such studies have been written several times before, but the world — and information technology in particular — is changing. Ciborra not only wants us to see the consequences on organizational forms of the most recent